

15/02/2021



**Assistant Professor, Department of Botany,  
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### **Objective**

To become a part of a dynamic group where I could further explore the skills and Capabilities which I gained in the whole academic career, and to serve in a challenging work environment. To conduct research in interdisciplinary area of life sciences (Nanophytomedicine, Nano-PGRs, phytochemistry and molecular genetics).

### **Research expertise**

- ☐ Isolation of natural products of Plant origin
- ☐ Screening of natural products for its therapeutic efficacy using in-vitro and in-vivo modals
- ☐ Surface functionalization of various metallic (SPIONs, Silica shelled-SPIONs AgNPs, AuNPs, TiOx etc.) and non-metallic (hydroxyapatite, C-nitrides, B-nitrides) nanostructures with bioactive natural products for biomedical applications.
- ☐ Bioengineering of nano-PGRs and its application in elevation of tolerance level in plants to various biotic and abiotic stress conditions.

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### **EDUCATION**

**Ph.D (Doctorof Philosophy) in Botany with area of specialization in Pharmacognosy (2019).**

Department of Botany; University of Peshawar, Peshawar, Pakistan.

“Pharmacognostic standardization, bioinspired synthesis, characterization and biological application of gild/silver nanoparticles of Euphorbia wallichii Hook.”

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**GRANTS AND SCHOLARSHIPS;**

- Research grant from University own resources, University of Peshawar (Rs=540000/-) for the project “**Pharmacognostic, phytochemical and pharmacological evaluation of *Euphorbia helioscopia* L. and *Euphorbia hirta* L.**”
- Research grant (Rs: 1,000,000) under the STFS project of Pakistan Science Foundation (2017-18)

**WORKSHOPS/ SYMPOSIUM ATTENDED**

1. 1st International Symposium on “**The Himalayas of Pakistan: Resources and Conservation Issues**” at Hazara University Mansehra, Pakistan. (2014). Present the research article titled “Therapeutic potential of *Euphorbia wallichii* Hook. a Himalayas herb”
  2. **4th International and 13th National Conference** of Botany, organized by Pakistan Botanical society at Shaheed Benazir Bhutto University Sheringal, Dir upper, Pakistan. (2014). Present the manuscript “***In-vitro* Antioxidant and *In-vivo* analgesic and antispasmodic efficacy of Biogenic Silver Nanoparticles of *Euphorbia wallichii* Hook.**”
  3. Two days workshop on “**Recent advances and new horizon in chemistry**” march 2015. Organized by National Center of Excellence in Physical Chemistry, University of Peshawar, Pakistan.
  4. One-day Symposium on “**Irradiation as a Sanitary and Phyto-sanitary Treatment of Medicinal Herbs/Plants**” October 2015, Organized by Nuclear Institute for Food and Agriculture (NIFA) Peshawar, Pakistan.
  5. Second International Symposium on “**Biodiversity of Pakistan; Prospects and Associated Issues**” at Baragali Summer Campus, University of Peshawar, from 21st to 25th May 2016.
  6. One day Workshop on “**Digitization of Herbarium**” at department of Botany, University of Peshawar, Pakistan.
  7. 6th National Conference on “**Climate change and Biodiversity issues of Pakistan**” from 1st to 4th June 2016, at Baragali summer Campus, university of Peshawar.
  8. **Invention to Innovation summit**, November 16-17, 2016, University of Science and
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Technology Peshawar, Pakistan.

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## RESEARCH

### BS (Hons.) thesis supervised

- ☐ Comparative proteomics of *Vigna radiate* seeds grown under different mutagenic stresses of cholchicine and Gemma irradiation (2016).
- ☐ Comparative antioxidant and antimicrobial efficacy of extract from pod and seeds of *Cassia fistula* and its mediated silver nanoparticles (2016).

### M.Sc thesis supervised

- ☐ Pharmacognostic and pharmacological evaluation of *Euphorbia Royleana* (2013)
  - ☐ Pharmacognostic and pharmacological evaluation of *Euphorbia cotonifolia* (2013)
  - ☐ Pharmacognostic and pharmacological evaluation of *Euphorbia pulchirima* (2013)
  - ☐ Green synthesis and Characterization of Gold nanoparticles of *Euphorbia peplus* and its antioxidant activity (2014).
  - ☐ Green synthesis of Gold nanoparticles of *Euphorbia royleana* and its antioxidant activity (2014).
  - ☐ Green synthesis, characterization and pharmacological application of Gold nano particles of *Euphorbia nerrifloia* (2014).
  - ☐ Green synthesis of Gold nanoparticles of *Jatropha gossipifolia* and its antioxidant activity (2014).
  - ☐ Bio-inspired green synthesis of Iron nanoparticles of *Euphorbia wallichii* Hook. and its antimicrobial and antioxidant potentials (2015).
  - ☐ Bio-Fabrication of Silver nanoparticles of Latex of *E. royleana* and its bio-efficacy (2015).
  - ☐ Green synthesis of Silver nanoparticles of Latex of *E. nerrifolia* and its biological
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efficacy (2015).

- Phytosynthesis, characterization and pharmacopotency of AgNPs using total Alkaloids of *Euphorbia wallichii* as reducing and stabilizing agents (2016).
- Tannins mediated AgNPs of bark of *Ficus religiosa* and its anti-promatigotes potential (2016).
- **M.Sc thesis under supervision**
- Surface functionalization of hydroxyapatite nanoparticles with citric acid; As potent Nano-PGR in alleviation of salt stress in *Zea mays* L.
- Isolation and biological characterization of natural products from various organic fractions of *Cassorina equisitifolia*

#### **M.Phil Thesis supervised**

- *In-Vivo* Analgesic, Antispasmodic and In-Vitro Antioxidant and Antimicrobial Functionality of Silver Nanospheres of *Euphorbia Dracunculoides* (2014-2016).
- Floristic Diversity, Plant Resource Utilization and Conservation Status of Sayyar Dara, Dir, Pakistan.
- Effect Of Tryptophan Capped Copper Nanoparticles On Physiological Attributes Of *Zea mays* Grown Under Induced Lead Stress.
- Effect Of Fumaric Acid Functionalized Hydroxyapatite Nanoparticles In Modulating Response Of *Zea mays* L. Grown Under Induced Salinity Stress
- Application Of Malic Acid Capped Hydroxyapatite Nanoparticles In Modulating Response Of *Zea mays* L. Grown Under Induced Salinity Stress
- Effect Of Glutamic Acid Capped Silver Nanoparticles And Indole Acetic Acid On Physiology Of *Zea mays* L. Under Induced Sodium Chloride (NaCl) Stress
- Effect Of Glutamic Acid Capped Iron Nanoparticles On Amelioration Of Osmotic Stress In Mung Bean (*Vigna radiate* L.)

## TEACHING EXPERIENCE

Assistant Professor, Department of Botany University of Peshawar; from June 17, 2014 till to date.

Lecturer, Department of Botany University of Peshawar; from September 28, 2007 to June 16, 2014.

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REHMAN ULLAH

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## SUBJECT TAUGHT

### M.Sc Level

Cell Biology and Biometry

Plant Biochemistry

Plant Physiology

Plant Ecology

### M. Phil Level

Introduction to Biological Statistics

Physiology of Plants under Stress

## PUBLICATIONS

### Published

1. **Rehman Ullah**, Sumaira Shah, Zahir Muhammad, Sajjad Ali Shah, Shah Faisal, Umbreen Khattak, Tauheed ul Haq, and Muhammad Taj Akbar. 2021. In vitro and in vivo applications of Euphorbia wallichii shoot extract-mediated gold nanospheres. Green Processing and Synthesis 10: 101–111.
2. Saleha Saeed , Sami Ullah, Muhammad Nafees, Fatima Bibi and **Rehman Ullah**. 2020. Morphological assessment of glutamate zerovalent iron nanoparticles by scanning electron microscopy and its combined effect with indole acetic acid on amelioration of lead toxicity in maize (Zea mays L.). Microsc Res Tech.83:1499 –1506.
3. Abdul Majeed, Zahir Muhammad, Habib Ahmad, **Rehman Ullah**, Sardar Sikandar Hayat, Naila Inayat, Saira Siyyar. 2020. Nigella sativa L.: Uses in traditional and contemporary medicines—An overview. Acta Ecologica Sinica, <https://doi.org/10.1016/j.chnaes.2020.02.001>.

4. Naila Inayat, Zahir Muhammad, **Rehman Ullah** and Abdul Majeed. 2020. Phytochemical screening and allelopathic evaluation of aqueous and methanolic leaf extracts of *Populus nigra* L. *Pure Appl. Biol.*, 9(1): 1242-1249.
5. Zahir Muhammad, Adnan Khan, Asad Ullah, **Rehman Ullah**, Ghulam Jelani, Sayed Ghayas Ali, Tahseen Ullah, Mjujeb Ur Rahman & Abdul Majeed. (2020), "Floristic Composition and Ecological Characteristics (Life Form, Leaf Size and Plant Habit) of The Vascular Flora of Gokand Valley, District Buner, Khyber Pakhtunkhwa, Pakistan" *Mitteilungen Klosterneuburg* , 70 ( 9 ) , 02-21.
6. Tahseen Ullah, Zahir Muhammad, Asad Ullah, **Rehman Ullah**, Mujeeb Ur Rahman, Ghulam Jelani, Sayed Ghayas Ali, Naila Inayat. (2020), "Floristic Diversity, Biological Spectrum and Phenology of The Vascular Plants of Daudzai Peshawar, Khyber Pakhtunkhwa, Pakistan" *Mitteilungen Klosterneuburg* , 70 ( 10 ) , 42-65.
7. Mujeeb Ur Rahman, Zahir Muhammad, Asad Ullah, **Rehman Ullah**, Tehseen Ullah, Ghulam Jelani, Sayed Ghayas Ali and & Hazrat Ali (2020), "Phytogeographical and Ecological Studies of the Endemic Flora of Zaini Valley Chitral, Hindukush Range, Pakistan" *Wulfenia* , 27 ( 10 ) , 02-10.
8. Umbreen Khattak, **Rehman Ullah**, Shafqat Ali Khan, Saiqa Afriq Jan, Abdur Rauf, Mohamed Fawzy Ramadan. 2019. Synthesis, characteristics and biological activities of silver nanoparticles from *Euphorbia dracunculoides*. *Eurasian Journal of Biosciences*, 13 (2): 2249-2260.
9. Tauheed ul Haq, Sami Ullah and **Rehman Ullah**. 2019. Beneficial Effects of Several Nanoparticles on the Growth of Different Plants Species. *Current nanoscience*. 15 (5): 460 – 470.
10. Athar Javaid, Sami Ullah, Muhammad Younas and Rehman Ullah. 2019. Moderation of water deficit stress-induced damages by the application of silver nano particles and indole butyric acid foliar spray in maize. *International Journal of Botany Studies*. 4 (6): 43-50
11. Naila Inayat, Zahir Muhammad, Rasool Khan, **Rehman Ullah** & Abdul Majeed. (2019). Suppressive effect of *Populus nigra* L. leaves on germination and growth competence of *Triticum aestivum* L. *Pakistan Journal of Botany*. 51(4): 1323-1330,
12. Zahir Muhammad, Naila Inayat, **Rehman ullah**, Wisal Muhammad Khan and Abdul Majeed. 2019. Allelopathic potential of *Cassia fistula* against *Lactuca sativa*, *Setaria italica* and *Pennisetum americanum* *Pure Appl. Biol.*, 8(1): 187-198,
13. Izaz Khuram, Zahir Muhammad, Nadeem Ahmad, **Rehman Ullah**, & Barinova, Sophia. (2019). Green and Charophyte Algae In Bioindication of Water Quality of The Shah Alam River (District Peshawar, Pakistan). *Transylv. Rev. Syst. Ecol. Res.* 21.1 (2019), "The Wetlands Diversity"
14. Abdul Majeed, Zahir Muhammad, **Rehman Ullah**, Zubeda Chaudhry and Irfanul Haq. 2019. Comparative assessment of detached leaflet and tuber disc assays for studying the aggressiveness of different isolates of *Phytophthora infestans*. *Pak J Bot.* DOI:10.30848/PJB2019-2(35).

15. Muhammad Ali, Zahir Muhammad **Rehman Ullah** & Abdul Majeed. (2018). Floristic Inventory And Ecological Attributes Of Plant Resources Of Hazar Nao Hills, District Malakand Pakistan. Journal of Weed Science Research. 24. 241-255. 10.28941/24-3(2018)-6.
16. Zahir Muhammad, **Rehman Ullah**, Naila Inayat, Abdul Majeed. 2018. Allelopathic Effect Of Ficus Benjamina Leaf Extract, Litter, And Mulch On Germination And Growth Of Sunflower. Cercetări Agronomice în Moldova. Vol. LI , No. 4 (176) / 2018: 36-46
17. **Rehman Ullah**, Siraj ud Din , Zahir Muhammad, Sumaira Shah and Saiqa Afriq Jan. 2018. Biological efficacy of phyto-synthetic silver nanoparticles using ethanol extract of Euphorbia wallichii Hook Rhizome as bio-reductant and surfactant. Trop J Pharm Res 2018; **17(10)**:1903-1909
18. Hazrat Ali, Zahir Muhammad, **Rehman Ullah**, Abdul Majeed, Inayat, Naila. (2018). Effect Of Gamma Irradiation on Flax Germination, Growth and Yield Performance of Flax (*Linum Usitatissimum* L.) Under Gamma Irradiation Stress. Cercetari Agronomica in Moldova; Vol. LI , No. 2 (174) / 2018: 17-26.
19. Abdul Majeed, Zahir Muhammad, **Rehman Ullah** and Saif ul Islam. (2018). Allelopathic Management of Some Noxious Weeds By The Aqueous Extracts Of *Parthenium Hysterophorus* and *Carthamus Oxyacantha*. Polish Journal of Natural Science. 33. 223-231.
20. Abdul Majeed, Zahir Muhammad, **Rehman Ullah** and Hazrat Ali. 2018. Gamma Irradiation I: Effect On Germination and General Growth Characteristics of Plants–A Review. Pak. J. Bot., 50(6): 2449-2453, 2018. Abdur Rahim Khan, Ihsan Ullah, Muhammad Waqas, Gun-Seok Park, Abdul Latif Khan, Sung-Jun Hong, **Rehman Ullah**, Byung Kwon Jung, Chung Eon Park, Shafiq-ur-Rehman, In-Jung Lee and Jae-Ho Shin. 2017. Host plant growth promotion and cadmium detoxification in Solinum nigrum, mediated by endophytic fungi. Ecotoxicology and Environmental Safety, 138: 180-188.
21. Sumaira Shah, Siraj ud Din, Adnan Khan, **Rehman ullah** and Sajjad Ali Shah. 2017. Green Synthesis and Antioxidant Study of Silver Nanoparticles of Root Extract of *Sageretia thea* and Its Role in Oxidation Protection Technology,” Journal of Polymers and the Environment, 2017. DOI 10.1007/s10924-017-1129-8.
22. Abdul Majeed, Zahir Muhammad, **Rehman Ullah**, Zabeeh Ullah, Rafi Ullah, Zubeda Chaudhry and Saira Siyar. 2017. Effect of Gamma Irradiation on Growth and Post-harvest Storage of Vegetables. PSM Biol. Res.,02(1):30-35. Abdul Majeed, Zahir Muhammad and **Rehman Ullah**. 2016. GROWTH AND YIELD RESPONSE OF FIELD PEA (PISUM SATIVUM L.) TO GAMMA IRRADIATION STRESS. Plant Breeding and Seed Science. DOI: 10.1515/plass-2016-0012
23. **Rehman Ullah**, Ishfaq Hameed, Muhammad Ibrar and Farrukh Hussain. 2016. Pharmacognostic and Pharmacological evaluation of Ruvellia tuberosa L. Pakistan Journal of Pharmaceutical sciences. 29 (6): 20199-2102.

24. Zahir Muhammad, Farrukh Hussain, **Rehman Ullah** and Abdul Majeed. 2015. Effect Of Halopriming On The Induction Of NaCl Salt Tolerance In Different Wheat Genotypes. Pak. J. Bot., 47(5): 1613-1620.
25. **Rehman Ullah**, Siraj ud Din, Sumaira Shah and Zahir Muhammad. 2014. Pharmacological evaluation of *Euphorbia helioscopia* L. and *Euphorbia hirta* L. International Journal of Biosciences (IJB). 4(1):20-26.
26. Sumaira Shah, Siraj ud Din, Zahir Muhammad and **Rehman Ullah**. 2014. Nutritional analysis and nutrients composition of various parts of *Sageretia thea* (**Osbeck**). International Journal of Biosciences (IJB). 4(1), 1-7.
27. Sumaira Shah, Siraj ud Din, **Rehman Ullah** and Qaiser jamal. 2013. Pharmacological evaluation of *Ziziphus nummularia* leaves for phytotoxic and molluscicidal bioassays. African journal of pharmacy and pharmacology. 7(45):2887-289.
28. Sumaira Shah, Siraj ud Din and **Rehman ullah**. 2013. Pharmacognostic standardization and FT-IR analysis of various parts of *Sageretia thea*. *International journal of Biosciences*. 3 (3):108-114.
29. Barkatullah, Muahmmad Ibrar, Niaz Ali, Naveed Muhammad and **Rehman ullah**. 2012. Antispasmodic potential of leaves, barks and fruits of *Zanthoxylum armatum* DC. African Journal of Pharmacy and pharmacology. 7(13): 685-693.
30. Barkathullah, Muhammad Ibrar, Ghulam Jelani, **Rehman ullah**, Maryam Ehsan. 2012. Phytosociological and ethnobotanical attributes of *Zantoxylum armatum* DC. International Journal of Biosciences (IJB), 2(12): 46-56.
31. Imtiaz Ahmad, Fazal Malik Sarim, Barkatullah, **Rehman ullah** and Sumaira Shah. 2012. Phytotoxic and cytotoxic activities of three species of *Spirogyra*. Pakistan journal of plant sciences, 18(1): 69-72.
32. **Rehman ullah**, Muhammad Ibrar, Sumaira Shah and Ishfaq Hameed. 2012. Phytotoxic, Cytotoxic and insecticidal activities of *Calendula arvensis* L. E3 Journal of Biotechnology and Pharmaceutical Research. 3 (6):104-111.
33. **Rehman ullah**, Farrukh Hussain, Lal Badshah, Mohib Shah and Ishfaq Hameed. 2011. Phytosociological study of Tehsil Manki Sharif, Nowshera, KPK, Pakistan. Pak. J. Pl. Sci., 17 (1):65-77.
34. Farrukh hussain, Ishfaq Hameed, Mohib Shah, Lal Badshah, **Rehman ullah** and G. Dastagir. 2011. Graveyards reflects reminent vegetation of tehsil Peshawar, Pakistan. Pak. J. Pl. Sci., 17 (1):55-63.
35. Tanvir Burni, M. Ibrar and **Rehman ullah**. 2011. Mycorrhizal status of *Elettaria cardamomum* (L.) Maton. Hamdard Medicus. 54 (3): 81-85.
36. Sumaira Shah, Siraj ud Din, Naveed Muhammad, **Rehman Ullah** and Lal Badshah. Evaluation of Cell size of

## Book Chapter

1. **Rehman Ullah**, Muhammad Z., Inayat N., Majeed A. (2020) Application of Nanoparticles in Agriculture as Fertilizers and Pesticides: Challenges and Opportunities. In: Rakshit A., Singh H., Singh A., Singh U., Fraceto L. (eds) New Frontiers in Stress Management for Durable Agriculture. **Springer, Singapore**. [https://doi.org/10.1007/978-981-15-1322-0\\_17](https://doi.org/10.1007/978-981-15-1322-0_17)



2. Zahir Muhammad, Abdul Majeed, **Rehman Ullah**, Naila Inayat and Saira Siyar. 2020. Effect of Heavy Metal Stress on Growth and Yields of Crop Plants: An Overview. Cellular and Molecular Phytotoxicity of Heavy Metals (Part of the Nanotechnology in the Life Sciences book series (NALIS): **Springer**. pp. 57-67.
3. Abdul Majeed, Zahir Muhammad, **Rehman Ullah**, Habib Ahmad, Naila Inayat and Saira Siyar. 2020. Heavy Metal-Contaminated Soils: Weeds as Potential Phytoremediation Agents—Issues and Prospects. Cellular and Molecular Phytotoxicity of Heavy Metals (Part of the Nanotechnology in the Life Sciences book series (NALIS): **Springer**. pp 179-190.
4. Abdul Majeed, Zahir Muhammad, **Rehman Ullah**, Saira Siyar. (2020). The Role of Ionizing Radiation-Induced Mutations in the Development of Rice Cultivars. In: Rakshit A., Singh H., Singh A., Singh U., Fraceto L. (eds) New Frontiers in Stress Management for Durable Agriculture. **Springer, Singapore**. [https://doi.org/10.1007/978-981-15-1322-0\\_8](https://doi.org/10.1007/978-981-15-1322-0_8)
5. Abdul Majeed, Zahir Muhammad and **Rehman Ullah**. 2019. Role of Seed Priming and Plant Growth-Promoting Rhizobacteria in Modulating Crops' Responses to Salinity Stress. Priming and Pretreatment of Seeds and Seedlings. Implication in Plant Stress Tolerance and Enhancing Productivity in Crop Plants. **Springer**. Pp. 552-572

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## PERSONAL BIODATA

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